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Prehistoric Ceramic Horizons in Southeastern China and their Extension into Formosa

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Introduction

Archæologists familiar with the prehistoric cultures of both Taiwan (Formosa) and the Chinese mainland have long agreed (despite the fact that the modern aboriginal cultures on the island are affiliated with the native cultures of Malaysia to the south) that much of its prehistoric culture was essentially an offshoot of that on the Chinese mainland to the west (Kanaseki 1943; Kano 1946, 1952; Chang 1954). Their conclusions were based on comparative studies of the characteristic features of individual artifacts; only rarely were they supported by stratigraphic evidence and distributional studies of cultural characteristics in established cultural contexts. Indeed prehistoric cultures of the southeastern coasts of China were not well known archæologically until recent years. Cultural similarities between Formosa and North and Central China are well indicated, but in the regions on the mainland closer to Formosa—the Huaiho, Lower Yangtze, and southeastern coastal provinces—such similarities were not clearly demonstrated until the last decade. For instance, by 1959 over two hundred prehistoric sites have been located in Kiangsu and twenty-one were fully excavated (*Kao-ku-hsüeh pao* 1959); by 1957 'scores of sites' had been identified in Chekiang (*ibid* 1957); and by 1959 more than eleven hundred 'neolithic' sites became known in Fukien (*Kao-ku* 1959). As early as 1956, no less than seventy-four neolithic sites had been named and described on the Kwangtung coast east of the Pearl delta, excluding Hong Kong (*K'ao-ku t'ung-hsün* 1956, 1957; *Wen-wu ts'an-k'ao tzu-liao* 1956, Maglioni 1938; Jao 1951). With the information from these archæological sites, many aspects of the prehistoric cultures in southeastern China are now much better known than before, and this has a great bearing upon the problems concerning the Formosa-Mainland relationship during the prehistoric period. In this article the prehistoric ceramic horizons of the southeastern coastal provinces of mainland China (southern Shantung, Kiangsu, Chekiang, Fukien, and Kwangtung east of the Pearl delta) are described and characterized, and attempt is made to show that some prehistoric assemblages on the western coast of Taiwan categorically belong to the same cultural sphere as the mainland, in a similar chronological sequence.

A ceramic horizon is formulated in archæology according to the occurrence of similar forms and decorative styles of pottery over a wide area during comparable time levels in each of the local sequences of culture within the area. In the case of Southeast China, where absolute chronologies are seldom available for prehistoric cultural remains, the time determination is usually accomplished by means of

typological comparisons of ceramic features, stratigraphy, and comparison of cultural contexts. Generally speaking, the formation of ceramic horizons may be accounted for by different factors such as cultural radiation, trade, warfare, and ethnic migrations. According to our current knowledge of Chinese prehistory as a whole, the formation of prehistoric ceramic horizons in Southeast China cannot be described meaningfully without a brief account of the ceramic horizons in prehistoric and early historic North China, since the former were extensions of the latter in several different senses.

The Neolithic and Bronze Age development of early cultures in North China, as currently understood (Chang 1963*a*) gave rise to the following successive ceramic horizons: *(i)* Corded Ware Horizon, characterized by hand-made pottery with cord-, mat-, or basket-impressions; probably made by the earliest farmers in the area and confined to the Nuclear Area (the confluence of Huangho, Fenho, and Weishui); *(ii)* Panshan Horizon, characterized by cord-marked pointed-bottomed jars and round-bottomed vessels with painted, realistic designs of animals and fish as well as simple geometric patterns, probably of the farmers having achieved a primary village-efficiency but still confined to the Nuclear Area; *(iii)* Miaotikou I Horizon, with characteristic flat-bottomed bowls and beakers painted in geometric patterns, apparently beginning to spread toward the periphery of the Nuclear Area; *(iv)* Machiayao Horizon, a local development in eastern Kansu; *(v)* Proto-Lungshan (Miaotikou II) Horizon, characterized by the decline of painted pottery and the significant occurrence of *ting* 鼎 and *chia* 斝 tripods, pedestals, and grey and black ware, indicative of an explosive expansion of the Nuclear Area farmers into the eastern alluvial plains of North China; *(vi)* Lungshan Horizon, marked by the disappearance of ceramic painting and the extensive development of tripods, pedestals, and paddle-and-anvil technique of pottery manufacture, as well as the appearance of several local styles, such as the *li* 鬲 tripods and checker-impressions in Honan and the use of potter's wheel and the black eggshell pottery in Shantung; *(vii)* Shang and Chou Horizons, of the historic Bronze Age civilization.

These ceramic horizons of prehistoric and early historic North China had different areas of geographic distribution, and varied in their respective extension or influence in the southeastern coastal areas (Chang 1959, 1963*a*, *b*). The Corded Ware Horizon of North China may be related to the sub-neolithic cultures of the Chinese Southwest, which extended into the southeastern coastal area along the northern coasts of the South China Sea. The subsequent Panshan and Miaotikou I Horizons, representing the first farmers of the Nuclear Area of North China, apparently were confined to that region. The Machiayao Horizon was localized in Kansu. The Proto-Lungshan (Miaotikou II) Horizon, however, being a stylistic expression of an expanding village farming phase with conspicuous signs of population explosion, was brought into the southeastern coasts and the eastern low country of North China; the southeastern coast at this stage in its early culture history apparently received the first significant infusion of immigrants from North China. The Lungshan Horizon that subsequently grew in North China on the basis of the Miaotikou II substratum in the form of several local phases apparently had merely sporadic influences upon the southeastern coasts. The cultural horizon of the latter areas—the Lungshanoid—that came about as the result of Miaotikou

II immigration, apparently continued and was transformed (under the influences from the Shang and Chou ceramic horizons radiating from North China) into a new Geometric Horizon.

Thus, the prehistoric ceramic horizons of the southeastern coasts of China—the Corded Ware, the Lungshanoid, and the Geometric—apparently were the result of different historic factors. The prehistoric ceramic sequence of Taiwan must also be viewed with these factors in mind.

The Corded Ware Horizon

The first known ceramic horizon of the southeast coast, characterized by red and gray pottery with impressed cord marks and invariably associated with chipped and partially ground stone implements—either the pebble hand-axes of the Hoabinhian tradition or the flake-and-blades or both—is confined, according to the available archæological evidence, where, at its western end, it adjoins the Chinese Southwest and Northern Vietnam and Laos, the classical centre of the Hoabinhian-Bacsonian. Chipped stone axes and coarse, cord-marked potsherds, that have been found as far east as Hsichiaoshan in Nanhai county on the Pearl delta, Hong Kong, and the Haifeng [Hoifung] area, seem to be affiliated with the sub-neolithic cultural assemblages to the west. The vast territory of the rest of Southeast China—the entire middle and lower Yangtze east of the Three Gates Rapids area in westernmost Hupei, the Huaiho valley, and the southeastern hills and coastal valleys of Chekiang, Kiangsi, Fukien, and most of Kwangtung—has not yielded so far any remains of this ceramic horizon; this negative evidence favours the horizon's western derivation.

Kano Tadao (1952: 176–7) has long suggested, on grounds of distribution, that corded ware and chipped stone axes were among the remains of the oldest cultural stratum on Formosa. His hypothesis has since been borne out by stratigraphical evidence that, at many stratified sites on the western coast of the island, the lower strata often contain corded sherds and chipped axes—although the reverse is not always the case, which indicates that the Corded Ware Horizon may on this island have been a long-lasting ceramic tradition as well (Chang 1954, 1956).

The propinquity of Formosa to the southern periphery of South China, where similar archæological assemblages of the Corded Ware Horizon are found, makes it probable that its Corded Ware Horizon was an eastern offshoot of the Corded Ware Horizon of the southwest. That a connection might exist between this early ceramic horizon and the Jōmon cultures of Japan our present data does not clearly show, though *jōmon* 縄文 means 'cord marks'. Aside from this feature of surface treatment, the potteries of the Corded Ware Horizon on Taiwan and of the Jōmon have little else in common.

The cultural make-up of the Corded Ware Horizon is not altogether well known, because the few sites excavated on the island cannot claim to be representative of this horizon. At the time of the Yüanshan shell-mound excavation in 1952, my opinion was that Yüanshan I, or the lower stratum of the site, substantiated Kano's corded ware cultural stratum (Chang 1954), but of this I have become increasingly doubtful. From Yüanshan I, in addition to cord-marked sherds, came ring-footed vessels with form, decoration, and paste closely resembling some ceramic wares of

the so-called Ch'inglienkang culture in Kiangsu, a local variety of the Proto-Lungshan Horizon that did not become well known until six or seven years ago. Whatever Yüanshan I may have been, it is unlikely that it was a typical assemblage of the Corded Ware Horizon which originated in the west.

Lungshanoid Horizon

The first ceramic horizon that appeared in the prehistoric sequences throughout the southeastern coastal provinces of China is the Lungshanoid, thus named by myself after the Proto-Lungshan and Lungshan Horizons of North China, with which this southeastern ceramic horizon shares many characteristic features (Chang 1959). The Lungshanoid ceramic horizon of southeastern China is characterized by ceramic painting, *ting* tripods, basins and dishes on high pedestals which are often perforated (cut out), *tsun*-shaped mouth, *kuei* tripods, pottery lid, and concentric rings on pottery reminiscent of the rings on bamboo (Fig. 1). Usually associated with the ceramics of the Lungshanoid Horizon are rectangular adzes of stone, perforated flat stone axes, remains of rice, and habitations on piles or on mounds, either natural or artificial.

Numerous sites of the Lungshanoid Horizon are found in the Huaiho valley of southwestern Shantung, northern Kiangsu, and the Lower Yangtze valley of southern Kiangsu. The sites of this region are usually grouped under the term, 'Ch'inglienkang Culture', after the type site at Ch'inglienkang, in Huaian county, northern Kiangsu. South of the Yangtze delta only in sporadic sites do we find Lungshanoid remains. These sites include the lower stratum of the Liangchu site in Hangchow, Chekiang; Changp'u in Fukien, and as far south as Hsishak'eng (so-called SOW) of Haifeng; and the Lamma island in Hong Kong. This horizon undoubtedly reflects a sudden expansion of the Proto-Lungshan farmers into this riverine and coastal area, hitherto unfarmed, since the features which characterize this ceramic horizon appear to be identical with the Proto-Lungshan complex of North China. Whether the rarity of Lungshanoid sites south of the Yangtze delta reflects incomplete investigation of the area or the small density of its Lungshanoid population, cannot be determined at this time. After the rise of the local traditions of the Lungshan Horizon in North China, the southeastern Lungshanoid, derived from the Proto-Lungshan, apparently persisted in forms that were little altered; although here and there later Lungshan influences are observable in the local inventories, such as the *li* tripods in the Huaiho valley and the Liangchu assemblage of Hangchow which, in an upper stratum, contains some typical coastal Shantung Lungshan elements.

In the southeast as a whole, the Lungshanoid must now be considered a single ceramic horizon, which cannot be broken up into Proto-Lungshan and Lungshan Horizons, because in the area as a whole the Proto-Lungshan is widespread and the Lungshan only locally represented. At the Fengpit'ou site near the city of Kaohsiung in southwestern Taiwan, both the Proto-Lungshan and the Lungshan subhorizons of the Lungshanoid appear to be well represented, by the lower and upper layers, respectively. The Proto-Lungshan (described as Painted Pottery culture) and Lungshan (described as Black Pottery culture) features of the

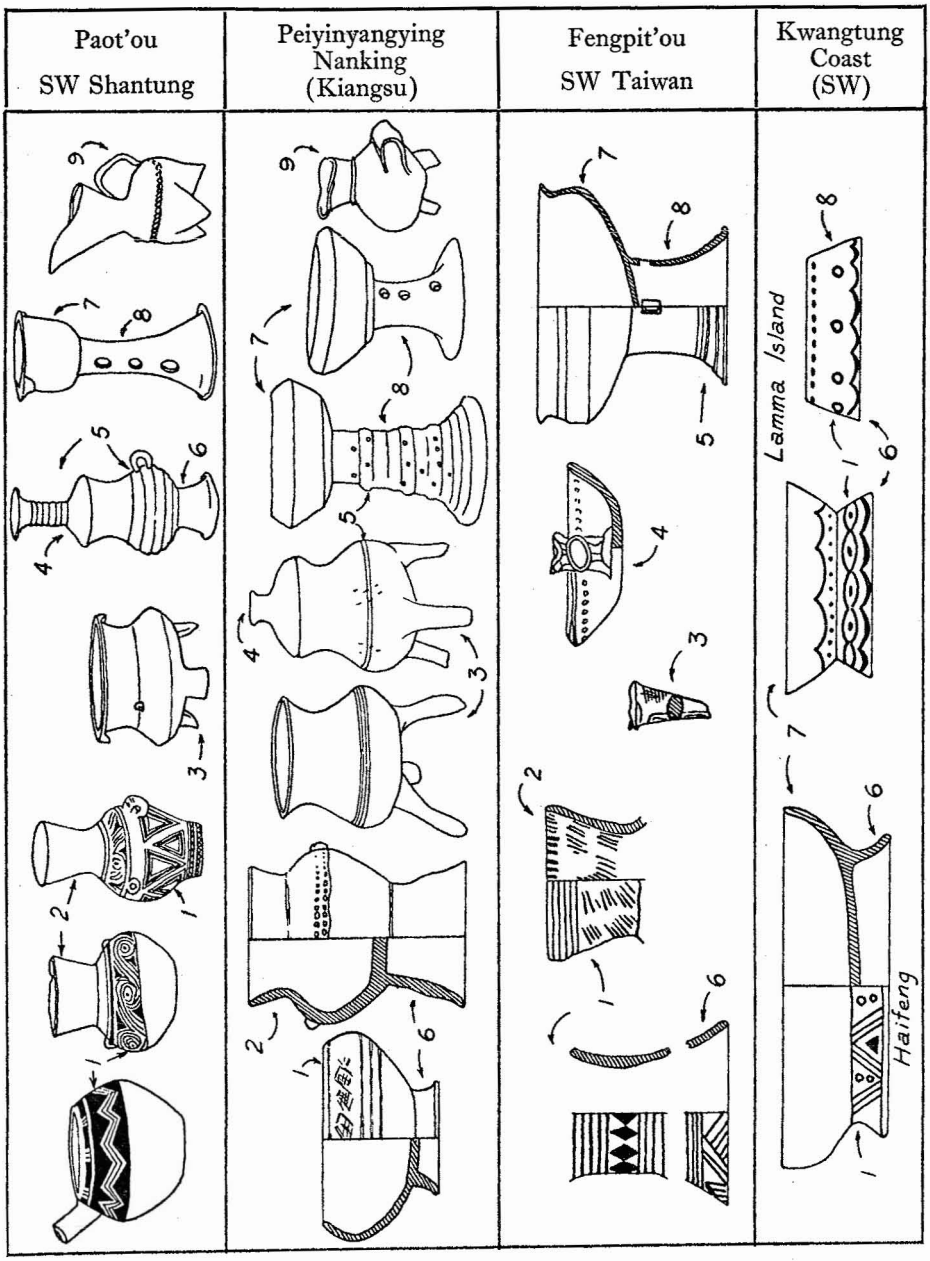

FIG. 1. Some Lungshanoid Horizon Markers, illustrated by finds from Paot'ou (Southwestern Shantung), Peiyinyangying (near Nanking, Kiangsu), Fengpit'ou (southwestern Formosa), and Kwangtung coasts.

1. ceramic painting; 2. *tsun* 尊 mouth; 3. tripod of the *ting* 鼎 type; 4. lid; 5. bamboo-like rings; 6. ring-foot; 7. *tou* 豆 fruit-stand; 8. pedestal with cut-outs; 9. tripod of the *kuei* 鬶 type.

Fengpit'ou strata are so conspicuously marked that Tsuboi (1956), investigator of the site, concludes without hesitation that 'the main current of [its] early civilization was fundamentally developed from the agricultural civilization that came there across the [Formosa] Strait from the opposite shore of the Chinese mainland'.

Besides Fengpi'tou, reports of painted pottery of the Proto-Lungshan variety on the island have come from two or three other localities in the vicinity of Kaohsiung and on the Pescadores (Kanaseki 1943) and, as mentioned above, red potsherds probably falling within the Proto-Lungshan categories have been uncovered from the lower stratum of Yüanshan. Black sherds that are described as 'Lungshan-like' have been found in a few sites in the Tainan basin as well as in the middle part of the island (Kanaseki and Kokubu 1949: 34). Although, only after extensive excavations have been made will the full extent of the Lungshanoid culture on Taiwan island be known, it is beyond question that the island comes within the sphere of expanse of this southeastern ceramic horizon.

Geometric Horizon

At least in some local Lungshanoid phases, in the southeastern coastal regions, were some or even most of the pottery moulded by hand. The vessels were beaten on the outside with a paddle, with a block inside to serve as anvil. The paddle was often carved with geometric designs, such as checkers, cord-marks, and textile marks, and impressed on the pottery surface. About the time when the Shang civilization arose in the North, in the southeast occurred an upsurge of the geometric decoration of pottery which, together with a number of other concurrent changes in ceramic and other technological features, gave rise to the widespread Geometric Ceramic Horizon. Among the notable other concurrent changes was the growing popularity of urns, footless and neckless or with low ring feet and necks, hand-made, hard fired into a bluish gray colour, and impressed with a variety of the so-called geometric patterns: checkers, parallel lines, basket-marks, concentric circles, chevrons, wavy lines, and interlocking rectangles. Many Lungshanoid forms and decorations lingered on, though these diminished gradually.

The stone and ceramic inventory of the Geometric Horizon, together with its rice cultivation and the habitation patterns, apparently indicate that this ceramic horizon of the southeast was an outgrowth of the Lungshanoid of the same area. But there must have been arrivals of both new immigrants and new cultural elements from Bronze Age North China as shown by the following phenomena: *(i)* Geometric ceramics identical with the southeastern forms constituted an important part of the Shang pottery inventory; and many of their shapes and decorations suggest the influence of bronze vessels on the making of pottery. *(ii)* Evidence of bronze foundry has been brought to light from sites of the Geometric Horizon in Kiangsu and Chekiang. *(iii)* Whole assemblages of Shang ceramics and bronzes have been found as far south as the Huaiho valley, and whole assemblages of Western Chou ceramics and bronzes as far south as southern Chekiang and Anhwei, occurring there side by side with the local Geometric phases.

The general area of distribution for the Geometric Horizon in southeastern China is largely the same as the Lungshanoid, but the density of sites grew within this area

to a remarkable extent. Whereas we have been able, as of now, to identify one or two Lungshanoid sites each for Chekiang, Fukien, and Kwangtung, these three coastal provinces have yielded literally hundreds of Geometric Horizon sites. This probably reflects a much greater population density involved with this horizon, which also spanned a longer period of time.

Most of the Taiwan prehistoric sites, which in overwhelming majority are located so far on the western coast, can be classified into the Geometric Horizon. Scores of sites with geometric pottery have been excavated from the Tainan basin in the south of the island to the Taipei basin in the north. Unquestionably the colonization of Formosa by mainland farmers took place mainly during this period or, roughly, from 1500 to 200 B.C. On the mainland, the Geometric Horizon exhibited more and more Bronze Culture characteristics (such as remains of bronze foundries, bronze artifacts, and many bronze vessel patterns on pottery) toward the latter phases of the Chou dynasty. Since such characteristics are virtually absent in the archæological remains on Formosa, it is probable that after heavy waves of immigrants landed on the island from the Geometric regions on the southeastern coast of the mainland during the first part of the 1500–200 B.C. interval, not only did new immigrants cease to arrive in numbers, but also close contacts between the mainland and the island discontinued. After about 200 B.C. the Han civilization penetrated all the southeastern coastal provinces while Formosa alone remained unaffected (Ling Shun-sheng 1952). An early Geometric ceramic tradition persisted on this island throughout the last centuries B.C. and the entire A.D. era until the ethnographic present. This noteworthy and somewhat strange archæological phenomenon must at the present remain unexplained. It might be argued that the pioneer settlement of Formosa by the neolithic Geometric farmers may have been curbed gradually by political authorities as the Eastern Chou civilizations grew and expanded into the southeast, but we have no substantial evidence for this.

Conclusions

This summary of new archæological evidence from southeastern China serves to reaffirm the long-held view of archæologists that the bulk of prehistoric cultures on the island of Formosa arrived from across the Formosa Strait in successive waves. The new materials from a region hitherto relatively unknown archæologically may serve to remove any lingering doubts about the close cultural ties between Formosa and North China conjectured previously on typological comparisons only. The better-known archæological sequence in southeastern China are also helpful in a chronological alignment of the western coastal cultures of Formosa. We now know with considerable certainty that the first ceramic horizon of Taiwan was probably an eastern offshoot of the Corded Ware Horizon of the Chinese Southwest. The Lungshanoid Horizon, centering in Kiangsu, established a few outposts in Chekiang, Fukien, Kwangtung, and Taiwan, and the extensive colonialization of the island was accomplished during the first phases of the Geometric, around the end of the second millennium and the beginning of the first millennium B.C.

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